

SPECIES OF PHYLLOBROTICA OCCURRING IN THE PACIFIC COAST STATES

(COLEPTERA, CHRYSOMELIDAE)

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The type of the genus *Phyllobrotica*, *P. quadrimaculata* (L.), found in northern Europe and Siberia, is a pale yellow beetle with elytral markings, as indicated by its name, consisting of four bluish spots. This color pattern with variation in the size and number of the spots is repeated in many of the other central European, Asia Minor, and Siberian species of the genus. In North America we have *P. decorata* (Say) which is also 4-spotted, but in this case the spots are brownish. Most North American species have the spots united in a long median vitta. Along the Pacific coast, both in America and Asia (China and Japan), occur species of *Phyllobrotica* that have entirely blue or bluish black elytra. In the Pacific United States there have been recognized up to now three species of this sort: *P. nigripes* Horn, an entirely dark beetle; *P. viridipennis* Lec., a pale yellow beetle with bluish green elytra; and *P. luperina* Lec., a bluish or greenish black beetle with pale yellow legs and antennae. In the collection of *P. viridipennis* from the California Academy of Sciences is a series of beetles of similar coloration but smaller, paler, and with dense fine pubescence on the upper surface. Also among the California Academy of Sciences specimens is what appears to be a race of *viridipennis* from Mokelumne Hill, Calaveras Co., that I cannot differentiate except by the shape of the aedeagus, which is consistently different in the several males that I have dissected. Among the specimens of *luperina* are some that are more lustrous and from a more northern range than *luperina*, having been collected in northern California, Oregon and Washington. In their case, too, the aedeagus is quite different from that of *luperina*.

I have examined specimens loaned by the California Academy of Sciences and the Los Angeles County Museum, as well as material in the U. S. National Museum. I have brought together the localities of these specimens showing the distribution of *Phyllobrotica* species in the Pacific Coast states and have made a key to them.

KEY TO SPECIES OF PHYLLOBROTICA OCCURRING IN THE PACIFIC COAST STATES

- | | |
|---------------------------------------------------------------------------|---------------------------|
| 1. Legs and antennae black | <i>P. nigripes</i> Horn |
| Legs and antennae pale | 2 |
| 2. Prothorax dark | 3 |
| Prothorax pale | 4 |
| 3. Elytra very shiny, not alutaceous. N. Calif., Oregon, Washington | <i>P. leechi</i> , n. sp. |
| Elytra not so shiny, distinctly alutaceous. Calif. | <i>P. luperina</i> Lec. |

4. Elytra covered with short fine pubescence; a small roundish dark spot on occiput. Sequoia Nat. Forest and vicinity *P. sequoiensis*, n. sp.
 Elytra very inconspicuously and sparsely pubescent; spot on occiput usually large, frequently covering back of head 5
5. Aedeagus widest before tip *P. viridipennis* Lec.
 Aedeagus widest near tip, Mokelumne Hill, Calaveras Co., Calif.
 *P. viridipennis mokelensis*, n. ssp.

***Phyllobrotica leechi*, new species**

(Figure 5)

About 6 mm. in length, elongate oblong-oval, lustrous, elytra distinctly and densely punctate in basal half, upper part of head and thorax black, elytra deep blue or green, antennae and legs reddish brown, body beneath dark.

Head with the upper part smooth, shining black down to the swollen frontal tubercles, a few punctures about eyes, lower front reddish brown. Antennae stout, pale, extending about half length of beetle, 4th joint nearly twice as long as 3rd. Prothorax subquadrate, approximately a fourth wider than long, with nearly straight sides, a semicircular depression in basal half, surface very shiny with a few scattered punctures, entirely black, Scutellum black. Elytra very shiny dark blue or green, distinctly and densely punctate in basal half, the punctures becoming finer and fading out in apical half. Body beneath dark piceous with sparse fine pubescence, a large shallow roundish excavation in male at tip of abdomen; legs reddish brown with a darker brown area near base of femora usually. Length 5.3 to 6.5 mm.; width 2.4 to 2.8 mm.

Type.—Holotype male, U.S.N.M. Type No. 63173, from Scotia, Humboldt Co., Calif., collected by H. S. Barber on June 20.

Other localities.—CALIFORNIA: Eureka, H. S. Barber; Green Point, F. E. Blaisdell; Mad River Mts., Van Dyke; Orick, Van Dyke, all in Humboldt Co.; Walker, Siskiyou Co., C. L. Fox. OREGON: Cascade Head Exper. Forest, on alder; Corvallis, Van Dyke; Mary's Peak, G. F. Mozzette. WASHINGTON: Crescent, Bruce Martin; Forks, Clallam Co., E. P. Van Duzee; Olympic Mts., C.V. Piper.

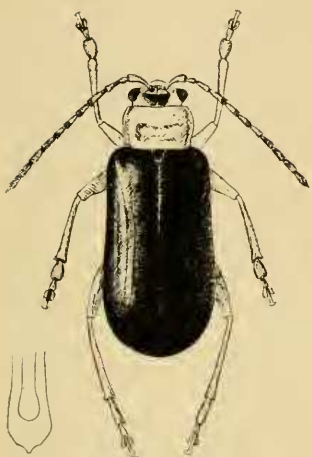
Remarks.—The more lustrous appearance of these beetles is the chief character to distinguish them from *luperina*. The aedeagus is also different. So far I have not seen any specimens of this species from south of Humboldt Co., or any specimens of *luperina* from north of there. This species is dedicated to Hugh Leech, who has generously picked out specimens for my study on many an occasion.

***Phyllobrotica sequoiensis*, new species**

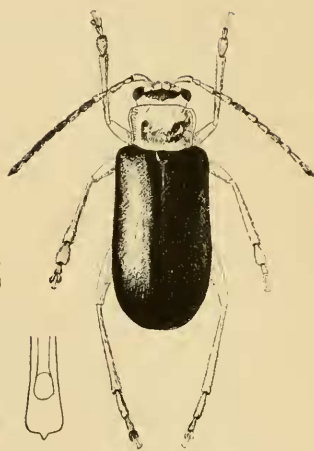
(Figure 3)

About 5 mm. in length, elongate oblong, faintly shining under the fine, short golden pubescence, pale yellow (reddish in life) with a small brown or piceous

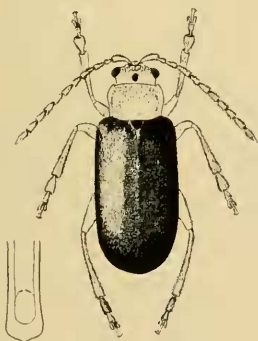
Figs. 1-6. Species of *Phyllobrotica* and their distribution in the Pacific Coast states.



1 *Phyllobrotica viridipennis* Lec.



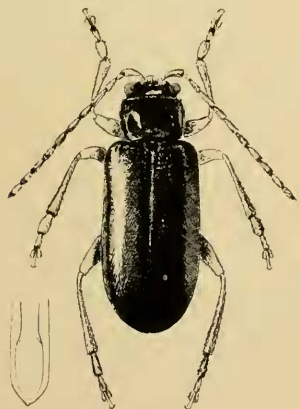
2 *Phyllobrotica viridipennis mohelensis*



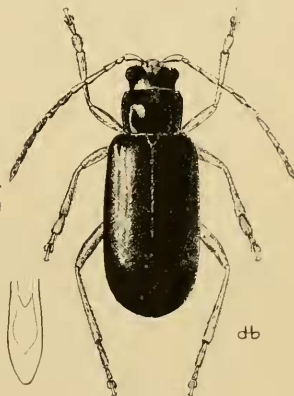
3 *Phyllobrotica sequoiensis*



4 *Phyllobrotica nigripes* Horn



5 *Phyllobrotica leechi*



6 *Phyllobrotica lupertina* Lec.

spot on the occiput of head and deep blue, purple or greenish elytra, body beneath, except the pale prosternum, piceous, legs and antennae pale.

Head pale yellowish brown with a small dark spot on the occiput and the mandibles brown edged, shining, smoothly rounded over the top, with fine pubescence, and fine punctures; frontal tubercles well developed. Antennae stout, nearly half as long as beetle, 3rd joint shorter than 4th, pale yellow brown sometimes deepening in color in distal joints. Prothorax subquadrate, a little wider than long, shining, pale yellow brown, moderately densely and coarsely punctate and with long, not very dense yellow pubescence, a semicircular depression in basal half. Scutellum shining piceous. Elytra metallic blue, purple, or even greenish, faintly shining under the short, moderately dense (in unrubbed specimens), fine, golden pubescence; finely and moderately densely punctate. Body beneath in male with a large shallow rounded excavation near tip of abdomen; prosternum pale, breast and abdomen piceous; legs entirely pale; densely pubescent. Length 4.8 to 5.8 mm.; width 2 to 2.6 mm.

Type.—Male and 10 paratypes, California Academy of Sciences, holotype. Two paratypes, U.S.N.M. Type No. 63174, from Potwisha, alt. 2—5000 ft., Sequoia National Park, California, collected June 20, 1929, Van Dyke collection.

Other localities.— CALIFORNIA: Wolverton, Sequoia National Park, June 24, 1929, Van Dyke; Sequoia National Park, alt. 2—3000 ft. A. T. McClay; Kaweah, Tulare Co., April 19, 1907, R. Hopping.

Remarks.—In general this is a smaller, paler beetle than *P. viridipennis* Lec., with a smaller, rounder, piceous or dark brown spot on the occiput. In its thick pubescence it resembles *P. nigripes* Horn. *P. viridipennis* is very inconspicuously and sparsely pubescent above. So far, *P. sequoiensis* has been collected only in a small area in or near Sequoia National Park.

***Phyllobrotica viridipennis mokelensis*, new subspecies**

(Figure 2)

About 6 mm. in length, elongate oblong oval, alutaceous, faintly shining, elytra and prothorax rather obsoletely punctate, the former more densely in basal half; head pale yellow brown with a broad piceous occipital spot or band, thorax yellow brown, elytra deep blue or green, body beneath with piceous breast and abdomen; antennae pale, the distal joints sometimes darker, legs pale.

Head pale with a broad piceous spot, often triangular in shape and extending from occiput to frontal tubercles, this area being lightly punctate and sparsely pubescent. Antennae about half length of beetle, stout, the 4th joint twice as long as 3rd, pale yellow brown, often deepening to dark brown in distal joints. Prothorax subquadrate with nearly straight sides, about a third wider than long, surface more or less densely punctate and with sparse golden brown pubescence; alutaceous, only faintly shining, a deep semicircular depression in basal half. Scutellum shining piceous. Elytra deep blue or bluish green, alutaceous, densely but obsoletely punctate in basal half, the punctures becoming finer and inconspicuous after the middle. Body beneath with breast and abdomen piceous, prosternum and legs pale, lightly pubescent, a large shallow roundish excavation near tip of abdomen in the male. Length 5.5 to 7 mm.; width 2.1 to 2.6 mm.

Type.—Male, and 15 paratypes, California Academy of Sciences, Two paratypes, U.S.N.M. Type No. 63175, from Mokelumne Hill, Calaveras Co., California, collected in June by F. E. Blaisdell.

Other localities.—1 specimen in U.S.N.M. collection labelled “?Cal.” from the M. L. Linell collection.

Remarks.—In its outward appearance this does not differ from the other specimens of *P. viridipennis*, but the males show a somewhat differently shaped aedeagus, with the orificial opening farther from the tip. Whether this is a distinct species or merely a race of *viridipennis* cannot be determined at present but I believe it merits a sub-specific name.

Distribution of Phyllobrotica luperina Lec.: California: Blocksburg, Humboldt Co., H. J. Rayner; Comfort, Mendocino Co., F. Knab; Lagunitas, Marin Co., F. E. Blaisdell, Van Dyke; Los Angeles, Los Angeles Co.; Los Gatos, Santa Clara Co., Hubbard and Schwarz; McCloud, Siskiyou Co., Fenyes; Mill Valley, Marin Co., H. E. Leech; Muir Woods, Marin Co., F. E. Blaisdell, E. P. Van Duzee; Ross, Marin Co., E. P. Van Duzee; Santa Cruz Mts., Santa Cruz Co., Koebele; Siskiyou Co., A. Koebele; Sobrevista, Sonoma Co., Van Dyke; Sylvania, A. Fenyes.

Distribution of Phyllobrotica nigripes Horn: California: Paraiso Springs, Monterey Co., L. S. Slevin; Los Angeles Co., Coquillet.

Distribution of Phyllobrotica viridipennis Lec.: California: Alta Meadows, Mt. Alta, G. E. Bohart; Angels' Camp, Calaveras Co., E. P. Van Duzee; Bear Lake, J. O. Martin; Calaveras Co., Van Dyke; Camp Baldy, San Bernardino Co., L. L. Muchmore; Cisco, Placer Co.; Claremont, Los Angeles Co., Baker; Carrville, Trinity Co., Van Dyke; Forest Home, San Bernardino Co., Van Dyke; Huckleberry Meadows, 6500 ft. alt., R. Hopping; Kaweah, 10,000 ft. alt., Tulare Co., R. Hopping; Kern Lakes, 6500 ft. alt., Tulare Co., Kern River, 6000 ft. alt., Tulare Co.; King's River Canyon, Tulare Co.; Lassen National Park, Lassen Co., Van Dyke; McCloud, Siskiyou Co., A. Fenyes; Meadows Valley, 4-5000 ft., Plumas Co., Van Dyke; Plumas Co., J. C. Huguenin; Potwisha, Sequoia National Forest, Tulare Co., Van Dyke; San Bernardino Mts., San Bernardino Co., L. L. Muchmore; Santa Cruz Mts., Santa Cruz Co.; Shasta Co., Coquillet; Sylvania, A. Fenyes; Tassajara, Monterey Co., L. S. Slevin; Tehachapi, Kern Co., Wickham; Tuolumne Co., Coquillet; Visalia, Tulare Co., Culbertson; Whitney Creek, Sierra Nevada Mts.; Yosemite, Tuolumne, Van Dyke.

BOOK NOTICE

POMP AND PESTILENCE, by Ronald Hare, M.D. The Philosophical Library, Inc., New York. 224 pp. 1955.

Written largely from the standpoint of disease organisms as parasites, this volume should be of considerable interest to the medical entomologist.—RICHARD H. FOOTE, *Entomology Research Branch, U. S. Department of Agriculture, Washington, D. C.*